Ambulatory Surgery for Early Childhood Caries in California, 2005

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Study Question

What populations use ambulatory surgery for the treatment of early childhood caries (ECC) in California?

Background

- Early childhood caries (ECC), or baby bottle tooth decay, is defined as caries affecting surfaces of the primary dentition of a child 71 months or younger.[1] This type of caries frequently appears first on the maxillary primary incisors.
- ECC is the most prevalent infectious disease in young children, occurring 5 times more often than asthma and 7 times more often than hay fever.[2]
- ECC occurs in all racial and socioeconomic groups, but it tends to be more prevalent in low income children.[3]
- If left untreated ECC can lead to serious health problems, significant pain, interference with eating and communication.[4]
- Due to the age of the patient and complexity of lesions, treatment for this type of caries is often provided in a hospital-based operating room under general anesthesia where costs rise precipitously.
- ECC is preventable, therefore the American Academy of Pediatrics recommends an oral health risk assessment and the establishment of a dental home by 1 year of age for children deemed at risk.[3]


Figure 1a. Mild Decay


Figure 1b. Moderate Decay


Figure 1c. Severe Decay

Methods

- 2005 Ambulatory Surgery Data from the Office of Statewide Health Planning and Development (OSHPD) were analyzed to identify children younger than 6 years of age who resided in California and who received treatment (n=83,973).
- Dental caries diagnoses were identified by searching the principal diagnosis for the ICD-9-CM codes 521.00-521.09 (n=10,451).
- Ambulatory surgery utilization rates for the treatment of ECC (per 100,00 population) were calculated and stratified by age, race/ethnicity, and Medicaid status.
- Rates were calculated using denominator data from the Department of Finance (DOF). The number of children under 6 who were eligible for Medi-Cal in California in 2004 were obtained from data published by the California Department of Health Services (the latest year data were available) and used to calculate rates stratified by Medicaid status.
- Rates across counties were examined, as was the distribution of dentists using data from 2002 from the California Dental Association.

Figure 2. Ambulatory surgery utilization rate for the treatment of ECC (per 100,000 population) by age, California 2005.

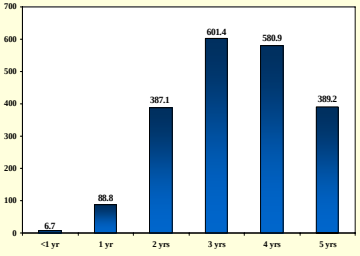

Figure 3. Ambulatory surgery utilization rate for the treatment of ECC (per 100,000 population) by race/ethnicity, California 2005.

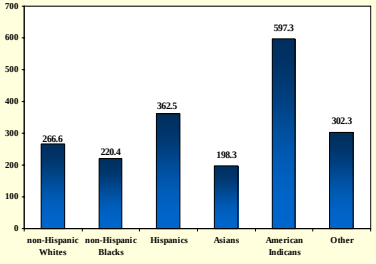

Figure 4. Payer source among children receiving ambulatory surgery for the treatment of ECC, California 2005 (n=10,400).

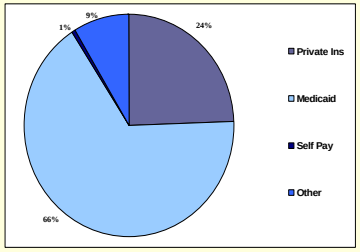

Figure 5. Ambulatory surgery utilization rate for the treatment of ECC (per 100,000 population) by Medicaid status and race/ethnicity, California 2005.

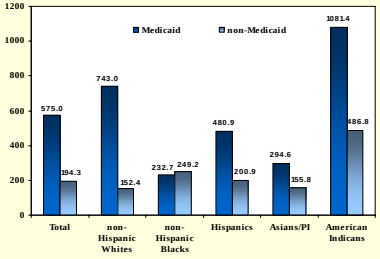

Figure 6. Ambulatory surgery utilization rate for the treatment of ECC (per 100,000 population) by county, adjusted for race/ethnicity, California 2005.

Figure 7. The number of dentists (per 100,000 population) by county, California, 2002.

Note: Numbers represent actively practicing dentists. Oral surgery, oral pathology, oral radiology and public health specialists were excluded.

Results

- Among the 83,973 children younger than 6 years of age who had an ambulatory surgery in California in 2005, dental caries was the second most frequent diagnosis (12%). The leading diagnosis was otitis media and eustachian tube disorder (19%).
- The ambulatory surgery utilization rate for ECC was highest among 3 year olds (601.4), American Indians (597.3), and Hispanics (362.5; Figures 2-3)
- Medicaid was the most frequent expected payer for the treatment of ECC (66%; Figure 4).
- Children on Medicaid had a higher rate of surgery for ECC than children who were not on Medicaid, except for Black children, who experienced the same rate of treatment for ECC regardless of Medicaid status (Figure 5).
- Counties in the Central Valley, particularly Tuolumne, Merced, and Mariposa, had the highest rates of treatment for ECC (≥ 1971.5 per 100,000; Figure 6).
- These counties ranked low with respect to the distribution of dentists in California in 2002, as did a number of other counties in the state (Figure 7).

Conclusions

- ECC can affect children from all socioeconomic classes, but is more prevalent among low socioeconomic populations, certain racial/ethnic groups, and certain regions of California.
- A number of regions in California have few dentists per capita.
- Additional research is needed to examine how race, ethnicity, socioeconomic class, rural location, and the supply of dentists contribute to poor access to and utilization of preventative oral health services.

Public Health Implications

- The American Academy of Pediatric Dentistry recommends children see a dentist by age one. However, accessing care may be problematic in rural or low-income areas with fewer dentists, especially when many dentists do not accept Medicaid.
- ECC is an infectious disease. Preventing oral diseases among pregnant women and new mothers can help reduce the transmission of oral bacteria to children. It is important that all women of childbearing age receive routine dental care.
- ECC can be reduced through better access to and utilization of dental services and beginning preventive treatments by age one.

References

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2. U.S. Department of Health and Human Services (HHS). Oral health in America: A report of the Surgeon General. Rockville, MD: HHS, National Institutes of Health, National Institute of Dental and Craniofacial Research, 2000.
3. American Academy of Pediatrics Policy Statement. Oral health risk assessment timing and establishment of dental home. *Pediatrics* 2003; 111(5): 1113-6.
4. Filstrup, SL, Briskie, E, da Fonseca, M, Lawrence, L, Wandera, A, Inglehart, MR. Early childhood caries and quality of life: child and parent perspectives. *Pediatric Dentistry* 2003; 25(5): 431-40.

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